

REMARKS

Applicant's invention comprises a system for passively and remotely identifying objects. The system is passive (i.e., not active) in that it does not require its own light source to operate. Rather, the invention merely observes the natural, reflected light emissions from the objects without projecting anything toward the objects. Since the invention does not need or use its own light source, it is capable of identifying the objects from extremely remote distances, including airborne or satellite-based observation sites.

In addition, the invention uses signatures on the objects that are spectrally tailored to specific, narrow bands of wavelengths to define a unique signature for each object. In other words, the uniqueness of each signature is found in the particular, narrow bands of wavelengths reflected--not a conventional bar code. The light naturally reflected by the objects and their unique signatures is, again, passively detected in respective, specific wavelength bands such that the signatures are recognized to discern what the objects are based on a database of information.

In contrast, the cited prior art reference, *Kennedy*, discloses a system for reading license plates in a parking garage or on a toll road. Col.1, lines 13, 21. Importantly, *Kennedy* requires its own light source 16 (Fig.1) to illuminate the indicia on the cars. Abstract; col.1, ln.46; col.2, ln.55; and col.3, ln.22-23. Moreover, every claim of *Kennedy* requires a light source as a critical element of its design. See *Kennedy's* independent Claims 1, 11, 14, 15, 16, and 18. *Kennedy* also goes into great detail how the light source must be a certain type of LED (col.2, ln.55-67), in "high-energy pulses" (col.3, ln.13-21), and synchronized with the shutter of a camera 26 (col.3, ln.30-50. Thus, *Kennedy* is inoperable without an intense beam of strobed, infrared light being shot at each vehicle and then carefully synchronized with its camera.

In addition, *Kennedy's* system has a very short range of "up to 75 feet" from which it can operate. Col.1, ln.63-64. The reason *Kennedy's* system will not work from greater distances is because it requires its own light source, which again must be powerful, very accurate (to pinpoint the indicia on the license plates), and synchronized. Furthermore, the indicia used by *Kennedy* is merely a bar code system. Importantly, it is the bar code itself that makes *Kennedy's* indicia unique—not the wavelengths of the light reflected by the indicia. Col.2, lines 36-37. In other words, *all* of *Kennedy's* indicia reflect light at the *same* wavelength. Col.2, ln.66 – col.3, ln.12.

Accordingly, the previously submitted claims have been amended and new claims have been added to more fully cover the scope of Applicant's invention. For example, Claim 1 is completely limited to a passive system: "A system for *passively* and remotely identifying objects," "an optical imaging system for remotely and *passively* detecting and decoding the signatures," and "a scanning system that *passively* detects light emanating from the signatures" (emphasis added). Since Claim 1 is passive by not requiring its own light source and *Kennedy* is completely active with and inoperable without its own light source, Claim 1 is allowable over that reference for this element alone.

In addition, Claim 1 also requires that the signatures be "spectrally tailored to define a unique signature for each of the objects...in respective, specific wavelength bands." Thus, the uniqueness of each signature is not found in bar coding (like *Kennedy*) but in the wavelengths at which light is reflected from the signatures.

Dependent Claim 4 requires "a remote position of the scanning system is selected from the group consisting of airborne and satellite-based." Since *Kennedy* has a range of operation limited to 75 feet, it is impossible for that reference to be operated anywhere except in ground-based applications. Claim 5 states that energy is reflected "in wavelength band widths of approximately one-half wavelength." As described above, since *Kennedy* uses bar codes (not

wavelengths) to distinguish its indicia, it cannot satisfy this requirement. Moreover, *Kennedy* uses the same wavelength for its light source and reflectance, and it is defined to a range of "770 to 1100 nanometers." Col.2, ln.67. At best, *Kennedy* prescribes the entire wavelength of "940 nm" as its preferred embodiment to avoid interference with sunlight. Col.2, ln.4-5. However, even if *Kennedy* was limited to a single wavelength (it is not), it uses that same wavelength for all of its indicia.

Claim 6 requires the wavelength bands to be encoded and "lie outside of threat bands of hostile detectors and hostile guided weapons." There is absolutely no teaching or suggestion in *Kennedy* for this element. Claim 7 states that "the signatures are painted on the objects," whereas *Kennedy* only uses "retro-reflective tape." Col.2, ln.45. Analogous to Claim 6, Claim 9 limits the objects to "airborne aircraft, grounded aircraft, and tanks," which are not shown or described by the cited reference, nor have any applicability to "parking garages and toll roads." Col.1, ln.13, 21.

Finally, Claim 11 requires the system to track "engagements of the objects and movement of supplies to and from the objects in real-time." In contrast, *Kennedy* only reads the indicia on individual cars as they enter parking garages or drive down toll roads. The information for one car is absolutely irrelevant to that for another car, so there is no teaching, suggestion, or motivation to modify *Kennedy* such that it would "track engagements between cars" (e.g., how would they engage?) or "movement of supplies" (e.g., what would the cars be supplied with?).

Applicant has added new Claims 21-25, which are directed to different embodiments of the signatures used by Applicant. Support for these Claims is found in Applicant's specification at page 6, paragraph 17, through page 7, paragraph 25. As suggested above, the signatures are based on very specific and narrow wavelengths, and combinations of layers and indexes of

refraction. Since *Kennedy* only contemplates the use of bar codes to distinguish each of its indicia, these claims are readily allowable over that reference.

Applicant also has added new Claims 26-33 to more thoroughly claim the invention. Each of these claims contains one or more of the elements described above to readily distinguish the prior art. The arguments for these claims are the same as those presented above.

It is respectfully submitted that the claims are in condition for allowance and favorable action is requested. The commissioner is hereby authorized to charge any additional fees that may be required to **Bracewell & Giuliani LLP's Deposit Account Number 50-0259**.

Respectfully submitted,



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